

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
10 March 2005 (10.03.2005)

PCT

(10) International Publication Number  
**WO 2005/020950 A1**

(51) International Patent Classification<sup>7</sup>: **A61K 7/48**

(21) International Application Number: **PCT/JP2004/012669**

(22) International Filing Date: 26 August 2004 (26.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2003-303811 28 August 2003 (28.08.2003) JP  
60/499,368 3 September 2003 (03.09.2003) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**WO 2005/020950 A1**

(54) Title: COSMETIC COMPOSITION COMPRISING A AND A LIPOPEPTIDE

(57) **Abstract:** The present invention provides a cosmetic composition, comprising 0.1 to 5 mass% of a lipopeptide compound, and 0.1 to 20 mass% of a polyoxyethylene glyceryl ether fatty acid ester and/or a polyoxyethylene sorbit fatty acid ester. The cosmetic of the present invention, with an extremely low skin irritating property, ensures high skin comfort and stability. In particular, when used as a cleansing cosmetic, it also exhibits an excellent washability.

## DESCRIPTION

## COSMETIC COMPOSITION COMPRISING A AND A LIPOPEPTIDE

## 5 CROSS-REFERENCE TO RELATED APPLICATIONS

This is an application filed pursuant to 35 U.S.C. Section 111(a) with claiming the benefit of U.S. provisional application Serial No. 60/499,368 filed September 3, 2003 under the provision of 35 U.S.C. 111(b), pursuant to 35 U.S.C. Section 119(e) (1).

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## TECHNICAL FIELD

The present invention relates to cosmetics. More specifically, the invention relates to a cosmetic comprising a lipopeptide compound derived from a microorganism, and a 15 polyoxyethylene glyceryl ether fatty acid ester and/or a polyoxyethylene sorbit fatty acid ester, which ensures high skin comfort, and which exhibits good washability when used as cleansing cosmetics.

## 20 BACKGROUND ART

As a lipopeptide compound derived from a microorganism, for example, sodium surfactin is known as a raw material for cosmetics, which, for its low skin irritating property and favorable biodegradability, has attracted attention, and is 25 disclosed in e.g., WO99/62482 and JP-A-2003-176211.

However, although the cleansing cosmetic disclosed in JP-A-2003-176211 is excellent in cleansing ability of a cosmetic, its washability with water is insufficient.

In particular, no cleansing cosmetic in gel form or cream 30 form having a good washability has been provided.

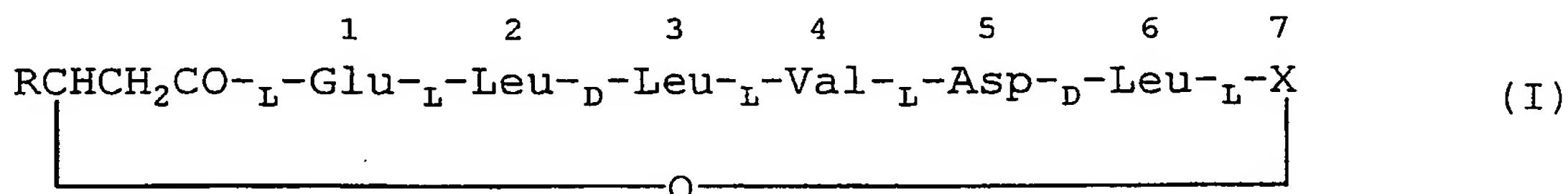
## DISCLOSURE OF THE INVENTION

An object of the present invention is to provide a cosmetic which, being stable and having an extremely low skin irritating property, ensures high skin comfort, and exhibits a good washability when used in a cleansing cosmetic.

As a result of intensive investigations to solve this problem, the present inventors have found that the aforementioned object is attained by a cosmetic which comprises a lipopeptide compound, and a polyoxyethylene glyceryl ether fatty acid ester and/or a polyoxyethylene sorbit fatty acid ester. Thus, the present invention was accomplished.

Accordingly, the invention relates to the following items.

1. A cosmetic composition, comprising 0.1 to 5 mass% of a lipopeptide compound, and 0.1 to 20 mass% of a polyoxyethylene glyceryl ether fatty acid ester and/or a polyoxyethylene sorbit fatty acid ester.
2. The cosmetic composition according to the above item 1, wherein the lipopeptide compound is derived from a microorganism.
- 20 3. The cosmetic composition according to the above item 2, wherein the lipopeptide compound is a surfactin represented by the following formula (I), an analogous compound or a salt thereof:



25 wherein X represents an amino acid residue selected from the group consisting of leucine, isoleucine, valine, glycine, serine, alanine, threonine, asparagine, glutamine, aspartic acid, glutamic acid, lysine, arginine, cysteine, methionine,

phenylalanine, tyrosine, tryptophan, histidine, proline, 4-hydroxyproline and homoserine, and R is a normalalkyl group having 8 to 14 carbon atoms, an isoalkyl group having 8 to 14 carbon atoms or an anteiso-alkyl group having 8 to 14 carbon atoms.

5 4. The cosmetic composition according to the above item 3, wherein the lipopeptide compound is sodium surfactin.

5. The cosmetic composition according to the above item 3, wherein the lipopeptide compound is a compound where the second, fourth and sixth amino acids in the formula (I) are each 10 independently substituted by amino acid selected from a group consisting of leucine, isoleucine, valine, glycine, serine, alanine, threonine, asparagine, glutamine, aspartic acid, glutamic acid, lysine, arginine, cysteine, methionine, phenylalanine, tyrosine, tryptophan, histidine, proline, 15 4-hydroxyproline and homoserine.

6 A cleansing cosmetic using the cosmetic composition according to any one of the above items 1 to 5.

7. The cleansing cosmetic according to the above item 6, wherein the cosmetic is in gel form or cream form.

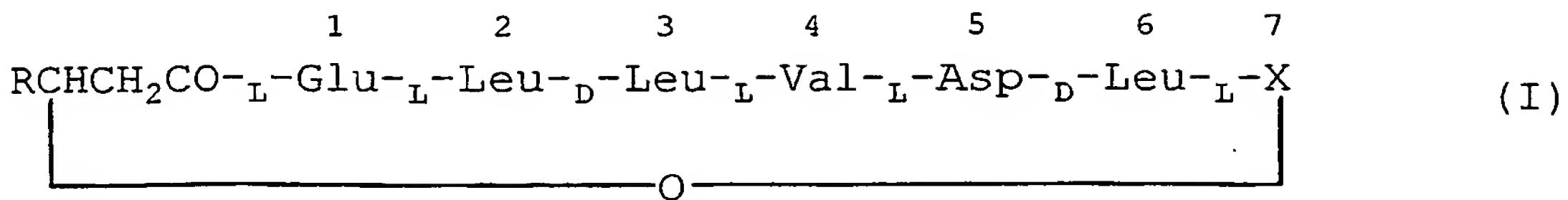
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#### **DETAILED DESCRIPTION OF THE INVENTION**

The invention is explained below in detail.

Examples of the lipopeptide compound used in the invention include lipopeptide compounds produced by a microorganism of genus 25 *Bacillus* such as *Bacillus subtilis* described in JP-A-2000-327591. Preferable examples include salts of surfactin and salts of an analogous compound thereof. The lipopeptide compound is usually a compound derived from a microorganism.

The surfactin herein refers to a compound represented by 30 the formula (I):



or a composition containing two or more kinds of the compounds represented by the formula (I).

In the above formula (I), X represents an amino acid residue selected from the group consisting of leucine, isoleucine, valine, glycine, serine, alanine, threonine, asparagine, glutamine, aspartic acid, glutamic acid, lysine, arginine, cysteine, methionine, phenylalanine, tyrosine, tryptophan, histidine, proline, 4-hydroxyproline and homoserine. Preferred X is leucine, isoleucine or valine.

R is a normalalkyl group having 8 to 14 carbon atoms, an isoalkyl group having 8 to 14 carbon atoms or an anteiso-alkyl group having 8 to 14 carbon atoms. The normalalkyl group is a straight chain alkyl group; the isoalkyl group usually has a structure which comprises  $(CH_3)_2CH-(CH_2)_n-$ ; and the anteiso-isoalkyl group usually has a structure which comprises  $CH_3-CH_2-CH(CH_3)-(CH_2)_n-$ .

The analogous compound of surfactin refers to compounds having amino acid(s) substituted by other amino acid (s) in the aforementioned formula (I). Specifically, examples of such a compound include compounds where L-leucine as the second amino acid, L-valine as the fourth amino acid and D-leucine as the sixth amino acid are each independently substituted by amino acid selected from a group consisting of leucine, isoleucine, valine, glycine, serine, alanine, threonine, asparagine, glutamine, aspartic acid, glutamic acid, lysine, arginine, cysteine, methionine, phenylalanine, tyrosine, tryptophan, histidine, proline, 4-hydroxyproline and homoserine, but not limited thereto. Hereinafter, "surfactin or an analogous compound thereof" may

be referred to as "surfactin".

Surfactin can be utilized as the inorganic salt or the organic salt as is seen from the above formula (I). Metal used for counter ion may be of any kind, for example, alkali metals such as sodium, potassium and lithium and alkaline earth metals such as calcium and magnesium, as long as the metal forms a salt with surfactin.

Examples of the organic salt include trimethylamine, triethylamine, tributylamine, monoethanolamine, diethanolamine, triethanolamine, lysine, arginine and choline.

Among these, sodium, potassium, monoethanolamine, diethanolamine, triethanolamine, lysine or arginine is preferred, and sodium is particularly preferred.

Sodium surfactin is on the market from SHOWA DENKO K.K., under the trade name of Aminofect (registered trademark of SHOWA DENKO K.K.).

The amount of lipopeptide compound contained in the cosmetic of the invention is preferably 0.1 to 5 mass%, more preferably 0.2 to 2 mass%, and still more preferably 0.4 to 1 mass%. When the amount is less than 0.1 mass%, the stability of the cosmetic may be insufficient, and also in cases where the compound is used in an amount exceeding 5 mass%, the stability may rather deteriorate.

The polyoxyethylene glyceryl ether fatty acid ester and/or polyoxyethylene sorbit fatty acid ester used in the invention may be used without any particular limitation, as far as the compound is conventionally employed in preparation of cosmetics. Examples of the polyoxyethylene glyceryl ether fatty acid ester include polyoxyethylene (3) glyceryl triisostearate, polyoxyethylene (5) glyceryl triisostearate, polyoxyethylene (10) glyceryl triisostearate, polyoxyethylene (20) glyceryl triisostearate, polyoxyethylene (30) glyceryl triisostearate,

polyoxyethylene (40) glyceryl triisostearate, polyoxyethylene (50) glyceryl triisostearate, polyoxyethylene (60) glyceryl triisostearate, polyoxyethylene (3) glyceryl isostearate, polyoxyethylene (5) glyceryl isostearate, polyoxyethylene (6) 5 glyceryl isostearate, polyoxyethylene (8) glyceryl isostearate, polyoxyethylene (10) glyceryl isostearate, polyoxyethylene (15) glyceryl isostearate, polyoxyethylene (20) glyceryl isostearate, polyoxyethylene (25) glyceryl isostearate, polyoxyethylene (30) glyceryl isostearate, polyoxyethylene (40) glyceryl isostearate, 10 polyoxyethylene (50) glyceryl isostearate, polyoxyethylene (60) glyceryl isostearate, polyoxyethylene (3) glyceryl tristearate, polyoxyethylene (4) glyceryl tristearate, polyoxyethylene (5) glyceryl tristearate, polyoxyethylene (6) glyceryl tristearate, polyoxyethylene (10) glyceryl tristearate, polyoxyethylene (20) 15 glyceryl tristearate, polyoxyethylene (4) glyceryl distearate, polyoxyethylene (3) glyceryl trioleate, polyoxyethylene (5) glyceryl trioleate, polyoxyethylene (10) glyceryl trioleate, polyoxyethylene (20) glyceryl trioleate, polyoxyethylene (30) glyceryl trioleate, polyoxyethylene (40) glyceryl trioleate, 20 polyoxyethylene (50) glyceryl trioleate and polyoxyethylene (60) glyceryl trioleate. For example, in a case where the compound is used for the purpose of improving washability as a cleansing cosmetic, those having a hydrophile-lipophile balance (HLB) of 6 to 13 are preferred, and among these, polyoxyethylene (20) 25 glyceryl triisostearate is particularly preferred. Examples of the polyoxyethylene sorbit fatty acid ester include polyoxyethylene sorbit monolaurate, polyoxyethylene (40) sorbit oleate, polyoxyethylene (4) sorbit tetraoleate, polyoxyethylene (3) sorbit tristearate, polyoxyethylene (30) sorbit tetraoleate, 30 polyoxyethylene (40) sorbit tetraoleate, polyoxyethylene (60) sorbit tetraoleate, polyoxyethylene (3) sorbit isostearate, polyoxyethylene (40) sorbit oleate, polyoxyethylene (60) sorbit

tetrastearate, polyoxyethylene (6) sorbit hexaoleate, polyoxyethylene sorbit hexastearate and polyoxyethylene (40) sorbit pentaoleate. For example, in a case where the compound is used for the purpose of improving washability as a cleansing cosmetic, for example, those having an HLB of 6 to 13 are preferred, and among these, polyoxyethylene (30) sorbit tetraoleate is particularly preferred. These may be used alone or in combination of two or more of them.

The amount of polyoxyethylene glyceryl ether fatty acid ester and/or polyoxyethylene sorbit fatty acid ester contained in the cosmetic of the invention is preferably 0.1 to 20 mass%, more preferably 0.4 to 18 mass%, and still more preferably 1 to 16 mass%. If the amount is less than 0.1 mass%, the object of the invention cannot be achieved in light of the stability, washability and the like properties of the cosmetic, and if the amount exceeds 20 mass%, it is unfavorable in that the cosmetic deteriorates in stability or skin comfort.

The cosmetic of the invention can be produced according to a conventional method. More specifically, it can be prepared using a generally utilized stirring apparatus or a generally utilized emulsification apparatus. Moreover, in instances where a cleansing cosmetic in gel form is produced, it can be also prepared by such a method as one disclosed in JP-A-2003-176211. Further, examples of the form for use of the cosmetic of the invention include skin toner, lotion, milky lotion, essence, cream, pack, makeup base, makeup cosmetics, massaging cosmetics and cleansing cosmetics. Among them, when a cleansing cosmetic is prepared according to the method as disclosed in JP-A-2003-176211, it is suitable because the property upon washing away with water becomes favorable.

The cosmetic of the invention may contain optional ingredients which are generally used in cosmetics in the range

where the object of the invention may be achieved.

Examples of such an ingredient include hydrocarbons such as ozokerite,  $\alpha$ -olefin oligomer, light isoparaffin, light liquid isoparaffin, squalene, squalane, synthetic squalane, 5 phytosqualane, ceresin, paraffin, polyethylene powder, polybutene, microcrystalline wax, liquid isoparaffin, liquid paraffin, mineral oil and vaseline;

natural waxes such as jojoba oil, carnauba wax, candelilla wax, rice bran wax, shellac, lanolin, mink sebaceous wax, 10 sperm whale wax, sugarcane wax, sperm whale oil, beeswax and montan wax, natural fats and fatty oils such as avocado oil, almond oil, olive oil, extra virgin olive oil, sesame seed oil, rice bran oil, rice oil, rice germ oil, corn oil, safflower oil, soybean oil, maize oil, rape seed oil, persic oil, palm kernel oil, palm 15 oil, castor oil, sunflower oil, high oleic sunflower oil, grape seed oil, cotton seed oil, coconut oil, hydrogenated coconut oil, beef tallow, hydrogenated oil, horse oil, mink oil, yolk oil, yolk fat oil, rose hip oil, kukui nut oil, evening primrose oil, wheat germ oil, peanut oil, Camellia japonica oil, Camellia kissi 20 oil, cacao butter, Japan wax, beef bone tallow, nest's-foot oil, swine tallow, equine tallow, ovine tallow, shea butter, macadamia nut oil and meadowfoam seed oil;

fatty acids such as lauric acid, myristic acid, palmitic acid, stearic acid, behenic acid, oleic acid, linoleic acid, 25 linolenic acid,  $\gamma$ -linolenic acid, isostearic acid, 12-hydroxystearic acid, undecylenic acid and coconut oil fatty acid;

higher alcohols such as isostearyl alcohol, octyl dodecanol, hexyl decanol, cholesterol, phytosterol, lauryl alcohol, 30 myristyl alcohol, cetyl alcohol, stearyl alcohol, oleyl alcohol, behenyl alcohol and cetostearyl alcohol;

alkylglyceryl ethers such as batyl alcohol, chimyl alcohol,

serachyl alcohol and isostearyl glyceryl ether;

esters such as isopropyl myristate, butyl myristate, isopropyl palmitate, ethyl stearate, butyl stearate, ethyl oleate, ethyl linoleate, isopropyl linoleate, cetyl caprylate, hexyl laurate, isooctyl myristate, decyl myristate, myristyl myristate, cetyl myristate, octadecyl myristate, cetyl palmitate, stearyl stearate, decyl oleate, oleyl oleate, cetyl ricinoleate, isostearyl laurate, isotridecyl myristate, isocetyl myristate, isostearyl myristate, octyldodecyl myristate, 2-ethylhexyl palmitate, isocetyl palmitate, isostearyl palmitate, 2-ethylhexyl stearate, isocetyl stearate, isodecyl oleate, octyldodecyl oleate, octyldodecyl ricinoleate, ethyl isostearate, isopropyl isostearate, cetyl 2-ethylhexanoate, cetostearyl 2-ethylhexanoate, stearyl 2-ethylhexanoate, hexyl isostearate, ethylene glycol dioctanoate, ethylene glycol dioleate, propylene glycol dicaprylate, propylene glycol dicaprylate/dicaprate, propylene glycol dicaprate, propylene glycol dioleate, neopentyl glycol dicaprate, neopentyl glycol dioctanoate, glycetyl tricaprylate, glycetyl tri 2-ethyl hexanoate, glycetyl tricaprylate/tricaprate, glycetyl tricaprylate/tricaprate/tristearate, glycetyl triundecylate, glycetyl triisopalmitate, glycetyl triisostearate, trimethylolpropane tri 2-ethylhexanoate, trimethylolpropane triisostearate, pentaerythrityl tetra 2-ethylhexanoate, 25 pentaerythrityl tetramyristate, pentaerythrityl tetraisostearate, diglyceryl tetraisostearate, octyldodecyl neopentanotae, isocetyl octanoate, isostearyl octanoate, 2-ethylhexyl isopelargonate, hexyldecyl dimethyloctanoate, octyldodecyl dimethyloctanoate, 2-ethylhexyl isopalmitate, 30 isocetyl isostearate, isostearyl isostearate, octyldodecyl isostearate, lauryl lactate, myristyl lactate, cetyl lactate, octyldodecyl lactate, triethyl citrate, acetyltriethyl citrate,

acetyltributyl citrate, trioctyl citrate, triisocetyl citrate, trioctyldodecyl citrate, diisostearyl malate, 2-ethylhexyl hydroxystearate, di 2-ethylhexyl succinate, diisopropyl adipate, diisobutyl adipate, dioctyl adipate, diheptylundecyl adipate, 5 sebacate diethyl, diisopropyl sebacate, dioctyl sebacate, cholesteryl stearate, cholesteryl isostearate, cholesteryl hydroxystearate, cholesteryl oleate, dihydrocholesteryl oleate, phytosteryl isostearate, phytosteryl oleate, isocetyl 12-stearoyl hydroxystearate, stearyl 12-stearoyl 10 hydroxystearate, isostearyl 12-stearoyl hydroxystearate, polyoxyethylene (3) polyoxypropylene (1) cetyl ether acetate, polyoxyethylene (3) polyoxypropylene (1) isocetyl ether acetate, isononyl isononanoate, octyl isononanoate, tridecyl isononanoate and isotridecyl isononanoate;

15 silicone oils such as methyl polysiloxane, methylphenyl polysiloxane, methyl hydrogen polysiloxane, methyl cyclopolysiloxane, octamethyl cyclotetrasiloxane, decamethyl cyclopentasiloxane, dodecamethyl cyclohexasiloxane, octamethyl trisiloxane, decamethyl tetrasiloxane, tetradecamethyl 20 hexasiloxane, highly polymerized methyl polysiloxane, dimethylsiloxane-methyl (polyoxyethylene) siloxane-methyl (poly oxypropylene) siloxane copolymer, dimethylsiloxane-methyl (polyoxyethylene) siloxane copolymer, dimethylsiloxane-methyl (polyoxypropylene) siloxane copolymer, 25 dimethylsiloxane-methylcetyl oxysiloxane copolymer, dimethylsiloxane-methyl stearoxysiloxane copolymer, polyether modified silicone, alcohol modified silicone, alkyl modified silicone and amino modified silicone;

polyhydric alcohols such as ethylene glycol, diethylene 30 glycol, triethylene glycol, polyethylene glycol, propylene glycol, dipropylene glycol, polypropylene glycol, glycerin, diglycerin, polyglycerin, 3-methyl-1,3-butanediol,

1,3-butanediol, 1,2-pentanediol and 1,2-hexanediol;  
saccharides such as mannitol, sorbitol, xylitol, maltitol,  
erythritol, pentaerythritol, glucose, sucrose, fructose,  
lactose, maltose, xylose and trehalose;

5 polymers such as sodium alginate, carrageen, agar,  
furcellaran, guar gum, quince seed, Amorphophalus konjak (arum  
root) mannan, tamarind gum, tara gum, dextrin, starch, locust  
bean gum, gum arabic, gum gatti, karaya gum, gum tragacanth,  
arabinogalactan, pectin, quince, chitosan, starch, curdlan,  
10 xanthan gum, gellan gum, cyclodextrin, dextran, pullulan,  
microcrystalline cellulose, methyl cellulose, ethyl cellulose,  
hydroxyethyl cellulose, hydroxypropyl cellulose,  
hydroxypropylmethyl cellulose, carboxymethyl cellulose, carboxy  
starch, cationized cellulose, starch phosphate ester, cationized  
15 guar gum, carboxymethyl-hydroxypropylated guar gum,  
hydroxypropylated guar gum, albumin, casein, gelatin, sodium  
polyacrylate, polyacrylic amide, carboxyvinyl polymer,  
polyethylene imine, highly polymerized polyethylene glycol,  
polyvinyl alcohol, polyvinyl pyrrolidone, polyvinyl ether,  
20 polyacryl amide, acrylic acid copolymer, methacrylic acid  
copolymer, maleic acid copolymer, vinylpyridine copolymer,  
ethylene/acrylic acid copolymer, vinyl pyrrolidone based polymer,  
vinyl alcohol/vinyl pyrrolidone copolymer, nitrogen-substituted  
acrylamide based polymer, amino modified silicone, cationized  
25 polymer, dimethylacrylammonium based polymer, acrylic acid based  
anion polymer, methacrylic acid based anion polymer, modified  
silicone, acrylate/methacrylate alkyl (C 10 to 30) copolymer and  
polyoxyethylene/polyoxypropylene copolymer;

alcohols such as ethanol, isopropyl alcohol, 1-butanol,  
30 2-butanol and benzyl alcohol;

anionic surfactants such as coconut oil fatty acid potassium,  
coconut oil fatty acid sodium, coconut oil fatty acid

triethanolamine, potassium laurate, sodium laurate,  
triethanolamine laurate, potassium myristate, sodium myristate,  
isopropanolamine myristate, potassium palmitate, sodium palmitate,  
isopropanolamine palmitate, potassium stearate,  
5 sodium stearate, triethanolamine stearate, potassium oleate,  
sodium oleate, castor oil fatty acid sodium, zinc undecylate,  
zinc laurate, zinc myristate, magnesium myristate, zinc palmitate,  
zinc stearate, calcium stearate, magnesium stearate, aluminum  
10 stearate, calcium myristate, magnesium myristate, aluminum  
dimyristate, aluminum isostearate, polyoxyethylene lauryl ether  
acetate, sodium polyoxyethylene lauryl ether acetate,  
polyoxyethylene tridecyl ether acetate, sodium polyoxyethylene  
tridecyl ether acetate, sodium stearoyl lactate, sodium  
15 isostearoyl lactate, sodium lauroyl sarcosine, coconut oil fatty  
acid sarcosine, sodium coconut oil fatty acid sarcosine, coconut  
oil fatty acid sarcosine triethanolamine, lauroyl sarcosine,  
potassium lauroyl sarcosine, lauroyl sarcosine triethanolamine,  
oleoyl sarcosine, sodium myristoyl sarcosine, sodium stearoyl  
20 glutamate, coconut oil fatty acid acyl glutamic acid, potassium  
coconut oil fatty acid acyl glutamate, sodium coconut oil fatty  
acid acyl glutamate, coconut oil fatty acid acyl glutamate  
triethanolamine, lauroyl acyl glutamic acid, potassium  
lauroyl acyl glutamate, sodium lauroyl acyl glutamate,  
lauroyl acyl glutamate triethanolamine, myristoyl acyl glutamic  
25 acid, potassium myristoyl acyl glutamate, sodium myristoyl acyl  
glutamate, stearoyl acyl glutamic acid, potassium stearoyl acyl  
glutamate, disodium stearoyl acyl glutamate, sodium hydrogenated  
beef tallow fatty acid acyl glutamate, sodium coconut oil fatty  
acid/hydrogenated beef tallow fatty acid acyl glutamate, sodium  
30 coconut oil fatty acid methylalanine, lauroyl methylalanine,  
sodium lauroyl methylalanine, lauroyl methylalanine  
triethanolamine, sodium myristoyl methylalanine, sodium lauroyl

methyltaurine, potassium coconut oil fatty acid methyltaurine, sodium coconut oil fatty acid methyltaurine, magnesium coconut oil fatty acid methyltaurine, sodium myristoyl methyltaurine, sodium palmitoyl methyltaurine, sodium stearoyl methyltaurine, 5 sodium oleoyl methyltaurine, sodium alkane sulfonate, sodium tetradecene sulfonate, sodium sulfosuccinate dioctyl, disodium lauryl sulfosuccinate, sodium coconut oil fatty acid ethyl ester sulfonate, sodium lauryl sulfate, triethanolamine lauryl sulfate, sodium cetyl sulfate, triethanolamine alkyl (11,13,15) sulfate, 10 sodium alkyl (12,13) sulfate, triethanolamine alkyl (12,13) sulfate, alkyl (12,14,16) ammonium sulfate, diethanolamine alkyl (12 to 13) sulfate, triethanolamine alkyl (12 to 14) sulfate, triethanolamine alkyl (12 to 15) sulfate, magnesium coconut oil alkyl sulfate/triethanolamine, lauryl ammonium sulfate, 15 potassium lauryl sulfate, magnesium lauryl sulfate, monoethanolamine lauryl sulfate, diethanolamine lauryl sulfate, sodium myristyl sulfate, sodium stearylsulfate, sodium oleyl sulfate, triethanolamine oleyl sulfate, sodium polyoxyethylene lauryl ether sulfate, triethanolamine polyoxyethylene lauryl 20 ether sulfate, sodium polyoxyethylene (1) alkyl (11,13,15) ether sulfate, triethanolamine polyoxyethylene (1) alkyl (11,13,15) ether sulfate, sodium polyoxyethylene (3) alkyl (11 to 15) ether sulfate, sodium polyoxyethylene (2) alkyl (12,13) ether sulfate, sodium 25 polyoxyethylene (3) alkyl (12 to 15) ether sulfate, sodium polyoxyethylene (2) lauryl ether sulfate, sodium polyoxyethylene (3) myristyl ether sulfate, sodium higher fatty acid alkanol amide sulfate ester, lauryl phosphate, sodium lauryl phosphate, potassium cetyl phosphate, diethanolamine cetyl phosphate, polyoxyethylene oleyl ether phosphate, polyoxyethylene lauryl ether phosphate, sodium polyoxyethylene lauryl ether phosphate, 30 polyoxyethylene cetyl ether phosphate, sodium polyoxyethylene

cetyl ether phosphate, polyoxyethylene stearyl ether phosphate, polyoxyethylene oleyl ether phosphate, sodium polyoxyethylene oleyl ether phosphate, polyoxyethylene alkylphenyl ether phosphate, sodium polyoxyethylene alkylphenyl ether phosphate,  
5 triethanolamine polyoxyethylene alkylphenyl ether phosphate, polyoxyethylene octyl ether phosphate, polyoxyethylene (10) alkyl (12,13) ether phosphate, polyoxyethylene alkyl (12 to 15) etherphosphate, polyoxyethylenealkyl (12 to 16) etherphosphate, triethanolamine polyoxyethylene lauryl ether phosphate and  
10 diethanolamine polyoxyethylene oleyl ether phosphate;

cationic surfactants such as dioctylamine, dimethylstearylamine, trilaurylamine, diethylaminoethylamide stearate, lauryl trimethylammonium chloride, cetyl trimethylammonium chloride, cetyl trimethylammonium bromide,  
15 cetyl trimethylammonium saccharin, stearyl trimethylammonium chloride, alkyl (20 to 22) trimethylammonium chloride, lauryl trimethylammonium bromide, alkyl (16,18) trimethylammonium chloride, stearyl trimethylammonium bromide, stearyl trimethylammonium saccharin, alkyl (28) trimethylammonium  
20 chloride, di(polyoxyethylene) oleyl methylammonium (2EO) chloride, dipolyoxyethylene stearyl methylammonium chloride, polyoxyethylene (1) polyoxypropylene (25) diethylmethyammonium chloride, tri(polyoxyethylene) stearyl ammonium (5EO) chloride, distearyl dimethylammonium chloride, dialkyl (12 to 15)  
25 dimethylammonium chloride, dialkyl (12 to 18) dimethylammonium chloride, dicocoyl dimethylammonium chloride, dicetyl dimethylammonium chloride, isostearyllauryl dimethylammonium chloride, benzalkonium chloride, myristyl dimethylbenzyl ammonium chloride, lauryl  
30 dimethyl(ethylbenzyl) ammoniumchloride, stearyl dimethylbenzyl ammonium chloride, lauryl pyridinium chloride, cetyl pyridinium chloride, lauroyl cholamino formylmethyl pyridinium chloride,

stearoyl cholamino formylmethyl pyridinium chloride, alkyl isoquinolinium bromide, methyl benzethonium chloride and benzethonium chloride;

ampholytic surfactants such as

5 2-alkyl-N-carboxymethyl-N-hydroxyethyl imidazolium betaine, alkyl diamino ethyl glycine hydrochloride, sodium lauryldiamino ethyl glycine, sodium undecyl hydroxyethyl imidazolium betaine, undecyl-N-carboxymethyl imidazolium betaine, disodium coconut oil fatty acid acyl-N-carboxyethyl-N-hydroxyethyl  
10 ethylenediamine, disodium coconut oil fatty acid acyl-N-carboxyethoxyethyl-N-carboxyethyl ethylenediamine, disodium coconut oil fatty acid acyl-N-carboxymethoxyethyl-N-carboxymethyl ethylenediamine, sodium laurylamino propionate, sodium laurylamino dipropionate,  
15 triethanolamine laurylamino propionate, sodium palm oil fatty acid acyl-N-carboxyethyl-N-hydroxyethyl ethylenediamine, betaine lauryldimethylamino acetate, betaine coconut oil alkyl dimethylamino acetate, betaine stearyl dimethylamino acetate, sodium stearyldimethyl betaine, coconut oil fatty acid  
20 amidopropyl betaine, palm oil fatty acid amidopropyl betaine, amidopropyl acetate betaine laurate, amidopropyl betaine ricinoleate, stearyl dihydroxyethyl betaine and lauryl hydroxysulfobetaine;

nonionic surfactants such as polyoxyethylene (10) alkyl (12,13) ether, polyoxyethylene lauryl ether, polyoxyethylene cetyl ether, polyoxyethylene stearyl ether, polyoxyethylene oleyl ether, polyoxyethylene (3,7,12) alkyl (12 to 14) ether, polyoxyethylene tridecyl ether, polyoxyethylene myristyl ether, polyoxyethylene-sec-alkyl (14) ether, polyoxyethylene isocetyl ether, polyoxyethylene cetostearyl ether, polyoxyethylene (2,10,20) isostearyl ether, polyoxyethylene oleylcetyl ether, polyoxyethylene (20) arachyl ether, polyoxyethylene

octyldodecyl ether, polyoxyethylene behenyl ether,  
polyoxyethylene octylphenyl ether, polyoxyethylene nonylphenyl  
ether, polyoxyethylene dinonylphenyl ether, polyoxyethylene (1)  
polyoxypropylene (1,2,4,8) cetyl ether, polyoxyethylene (5)  
5 polyoxypropylene (1,2,4,8) cetyl ether, polyoxyethylene (10)  
polyoxypropylene (1,2,4,8) cetyl ether, polyoxyethylene (20)  
polyoxypropylene (1,2,4,8) cetyl ether, polyoxyethylene  
polyoxypropylene lauryl ether, polyoxyethylene (3)  
polyoxypropylene (34) stearyl ether, polyoxyethylene (4)  
10 polyoxypropylene (30) stearyl ether, polyoxyethylene (34)  
polyoxypropylene (23) stearyl ether, polyoxyethylene  
polyoxypropylene cetyl ether, polyoxyethylene polyoxypropylene  
decyltetradecyl ether, polyethylene glycol monolaurate,  
ethylene glycol monostearate, polyethylene glycol monostearate,  
15 polyethylene glycol monooleate, ethylene glycol fatty acid ester,  
self-emulsifying ethylene glycol monostearate, diethylene  
glycol laurate, polyethylene glycol myristate, polyethylene  
glycol palmitate, diethylene glycol stearate, self-emulsifying  
polyethylene glycol (2) monostearate, polyethylene glycol  
20 isostearate, ethylene glycol dioctanoate, diethylene glycol  
dilaurate, polyethylene glycol dilaurate, polyethylene glycol  
(150) dipalmitate, ethylene glycol distearate, diethylene glycol  
distearate, polyethylene glycol distearate, ethylene glycol  
dioleate, polyethylene glycol dioleate, polyethylene glycol  
25 diricinoleate, polyoxyethylene (20) sorbitan monolaurate,  
polyoxyethylene (20) sorbitan monopalmitate, polyoxyethylene  
(6) sorbitan monostearate, polyoxyethylene (20) sorbitan  
monostearate, polyoxyethylene (20) sorbitan tristearate,  
polyoxyethylene (6) sorbitan monooleate, polyoxyethylene (20)  
30 sorbitan monooleate, polyoxyethylene (20) sorbitan trioleate,  
polyoxyethylene (20) coconut oil fatty acid sorbitan,  
polyoxyethylene (10 to 80) sorbitan monolaurate, polyoxyethylene

sorbitan tristearate, polyoxyethylene (20) sorbitan isostearate, polyoxyethylene (150) sorbitan tristearate, polyoxyethylene castor oil, polyoxyethylene hydrogenated castor oil, polyoxyethylene (10) hydrogenated castor oil, polyoxyethylene (20) hydrogenated castor oil, polyoxyethylene (40) hydrogenated castor oil, polyoxyethylene (50) hydrogenated castor oil, polyoxyethylene (60) hydrogenated castor oil, lipophilic glycerin monostearate, lipophilic glycerin monooleate, self-emulsifying glycerin monostearate, coconut oil fatty acid 5 glyceryl, glycerin laurate, glycetyl myristate, glycetyl isostearate, glycetyl ricinoleate, glycetyl monohydroxystearate, glycerin oleate, glycetyl linoleate, glycetyl erucate, glycetyl behenate, wheatgermoil fatty acid glyceride, safflower oil fatty acid glycetyl, hydrogenated soybean fatty acid glycetyl, 10 saturated fatty acid glyceride, cotton seed oil fatty acid glycetyl, monomyristate glycetyl monoisostearate, mono tallowate glyceride, monolanolin fatty acid glycetyl, glycetyl sesquioleate, glycetyl distearate, glycetyl diisostearate, glycetyl diarachidate, sorbitan monolaurate, sorbitan 15 monopalmitate, sorbitan monostearate, sorbitan monoisostearate, sorbitan monooleate, sorbitan sesquistearate, sorbitan sesquioleate, sorbitan tristearate, sorbitan trioleate, coconut 20 oil fatty acid sorbitan, sorbitan isostearate, sorbitan sesquiisostearate, sorbitandistearate, diglyceryl isopalmitate, 25 poly(4 to 10)glyceryl monolaurate, poly(10)glyceryl monomyristate, poly(2 to 10)glyceryl monostearate, poly(2 to 10)glyceryl monoisostearate, poly(2 to 10)glyceryl monooleate, diglyceryl sesquioleate, poly(2 to 10)glyceryl diisostearate, poly(6 to 10)glyceryl distearate, diglyceryl triisostearate, 30 poly(10)glyceryl tristearate, poly(10)glyceryl trioleate, poly(2)glyceryl tetraisostearate, decaglyceryl pentastearate, poly(6 to 10)glyceryl pentaoleate, poly(10)glyceryl

heptastearate, decaglyceryl decastearate, poly(10)glyceryl decaoleate, concentrated poly(6)glyceryl ricinoleate, sucrose fatty acid ester, coconut oil fatty acid sucrose ester, alkyl glucoside, coconut oil alkyl dimethylamine oxide, lauryl 5 dimethylamine oxide, dihydroxyethyl lauryl dimethylamine oxide, stearyl dimethylamine oxide, oleyl dimethylamine oxide and polyoxyethylene coconut oil alkyl dimethylamine oxide;

natural surfactants such as saponin, lecithin, soybean phospholipid, hydrogenated soybean phospholipid, soybean 10 lysophospholipid, hydrogenated soybean lysophospholipid, yolk lecithin, hydrogenated yolk lysophosphatidylcholine, phosphatidylcholine, phosphatidylethanolamine, phosphatidylserine, sphingophospholipid, sphingomyelin, ganglioside, bile acid, cholic acid, deoxycholic acid, sodium 15 cholate, sodium deoxycholate, spiculiporic acid, rhamnolipid, trehalose lipid, sophorolipid and mannosyl erythritol lipid;

ultraviolet ray absorbers such as: para-aminobenzoic acid derivatives such as para-aminobenzoic acid, ethyl para-aminobenzoate, glyceryl para-aminobenzoate, amyl 20 para-dimethyl aminobenzoate and 2-ethylhexyl para-dimethyl aminobenzoate; cinnamic acid derivatives such as benzyl cinnamate, mono-2-ethylhexanoate glyceryl dipara-methoxycinnamate, methyl 2,4-diisopropyl cinnamate, ethyl 2,4-diisopropyl cinnamate, potassium para-methoxycinnamate, sodium para-methoxycinnamate, 25 isopropyl para-methoxycinnamate, 2-ethylhexyl para-methoxycinnamate, 2-ethoxyethyl para-methoxycinnamate and ethyl para-ethoxycinnamate; urocanic acid derivatives such as urocanic acid and ethyl urocanate; benzophenone derivatives such as 2,4-dihydroxybenzophenone,

30 2,2',4,4'-tetrahydroxybenzophenone,  
sodium 2-hydroxy-4-methoxy-5-sulfobenzophenone,  
2-hydroxy-4-methoxybenzophenone-5-sulfonate,

2-hydroxy-4-methoxybenzophenone,  
2,2'-dihydroxy-4,4'-dimethoxybenzophenone and sodium  
2,2'-dihydroxy-4,4'-dimethoxy-5-sulfonylbenzophenone; salicylic  
acid derivatives such as ethylene glycol salicylate,  
5 salicylate-2-ethylhexyl, phenyl salicylate, benzyl salicylate,  
p-tert-butylphenyl salicylate, homomenthyl salicylate and  
salicylate-3,3,5-trimethylcyclohexyl;  
2-(2'-hydroxy-5'-methoxyphenyl)benzotriazole and  
4-tert-butyl-4'-methoxybenzoyl methane;

10 powders and color materials such as: kaolin, silicic  
anhydride, magnesium aluminum silicate, sericite, talc, boron  
nitride, mica, montmorillonite, hemp cellulose powder, wheat  
starch, silk powder, maize starch; natural dyes such as nitro  
dyes, azo dyes, nitroso dyes, triphenylmethane dyes, xanthene  
15 dyes, quinoline dyes, anthraquinone dyes, indigo dyes, pyrene  
dyes, phthalocyanine dyes, flavonoid, quinone, porphyrin, water  
soluble annatto, sepia powder, caramel, guaiaculene, gardenia  
blue, gardenia yellow, cochineal, shikonin, sodium copper  
chlorophyllin, paprika dye, safflower red, safflower yellow,  
20 laccaic acid and riboflavin butyrate ester; carbon black, yellow  
iron oxide, black iron oxide, red iron oxide, iron blue,  
ultramarine blue, zinc oxide, chromium oxide, titanium oxide,  
black titanium oxide, zirconium oxide, chromium hydroxide,  
alumina, magnesium oxide, barium sulfate, aluminum hydroxide,  
25 calcium carbonate, lithium cobalt titanate, manganese violet and  
pearl pigment.

plant extracts such as Angelica keiskei extract, Uncaria  
gambir extract, avocado extract, sweet hydrangea leaf extract,  
Gynostemma pentaphyllum makino extract, Althaea officinalis  
30 extract, Arnica montana extract, oil soluble Arnica montana  
extract, almond extract, aloe extract, Japanese styrax benzoin  
extract, Ginkgo biloba extract, Stinging nettle extract, Orris

rhizome root extract, fennel extract, turmeric extract, dog rose fruit extract, Echinacea leaf extract, Scutellaria root extract, Phellodendron bark extract, Japanese captis extract, barley extract, okura extract, Hypericum perforatum extract, oil soluble 5 Hypericum perforatum extract, Lamium album extract, oil soluble Lamium album extract, Ononis spinosa root extract, Nasturtium officinale extract, orange extract, orange flower water, seaweed extract, persimmon tannin, pueraria root extract, Japanese valerian extract, cattail extract, Chamomile (matricaria) extract, oil soluble Chamomile (matricaria) extract, Chamomile (matricaria) distillate, Avena sativa (oat) kernel extract, carrot extract, oil soluble carrot extract, carrot oil, Artemisia capillaris extract, Glycyrrhiza glabra (licorice) extract, powdered Glycyrrhiza glabra (licorice) extract, Glycyrrhiza 10 glabra (licorice) extract flavonoid, cantharides tincture, raspberry extract, kiwi extract, cinchona extract, cucumber extract, apricot kernel extract, quince seed extract, gardenia florida extract, Sasa albomarginata extract, Sophora root extract, walnut shell extract, Citrus paradisi (grapefruit) extract, 15 Clematis vitalba leaf extract, black sugar extract, chlorella extract, mulberry bark extract, Cinnamon bark extract, Gentian extract, Geranium herb extract, black tea extract, Nuphar extract, burdock root extract, oil soluble burdock root extract, wheat germ extract, hydrolyzed wheat powder, rice bran extract, 20 fermented rice bran extract, Symphytum officinale (comfrey) extract, Asiasarum root extract, Crocus sativus (saffron) extract, Saponaria officinalis extract, oil soluble salvia extract, Crataegus cuneata fruit extract, Zanthoxylum fruit extract, Lentinus edodes extract, powdered Lentinus edodes extract, 25 Rehmannia root extract, Lithospermum root extract, oil soluble Lithospermum root extract, Perilla herb extract, linden extract, oil soluble Tilia europaea extract, Filipendula extract, Peony 30

root extract, *Coix lacryma-jobi* extract, ginger extract, oil soluble ginger extract, ginger tincture, *Acorus calamus* root extract, *Betula pendula* (birch) extract, oil soluble *Betula alba* (birch) extract, *Betula pendula* (birch) sap, *Lonicera japonica* extract, *Equisetum arvense* extract, oil soluble *Equisetum arvense* extract, scordinin, stevia extract, ivy extract, *Crataegus oxyacantha* (whitethorn) extract, *sambucus* extract, *Juniperus communis* extract, *Achillea millefolium* extract, oil soluble *Achillea millefolium* extract, *Mentha piperita* (peppermint) extract, *Salvia officinalis* (sage) extract, oil soluble *Salvia officinalis* (sage) extract, *Salvia officinalis* (sage) water, *Malva Sylvestris* (mallow) extract, *Apium graveolens* (celery) extract, *Cnidium officinale* extract, *Cnidium officinale* water, *Swertia* herb extract, *Glycine max* (soybean) extract, *Jujube* extract, thyme extract, green tea extract, tea leaf dry distilled solution, tea seed extract, clove extract, *Citrus unshiu* peel extract, *Camellia japonica* extract, *Centella asiatica* extract, oil soluble walnut extract, duku extract, *Terminalia sericea* extract, *Capsicum* tincture, Japanese angelica root extract, oil soluble Japanese angelica root extract, Japanese angelica root water, *Calendula officinalis* flower extract, oil soluble *Calendula officinalis* flower extract, soy milk powder, peach seed extract, Bitter orange peel extract, *Houttuynia cordata* extract, *Solanum lycopersicum* (tomato) extract, *Potentilla tormentilla* Schrk (Rosaceae) extract, fermented soybeans extract, Ginseng extract, oil soluble Ginseng extract, *Allium sativum* (garlic) extract, wild rose extract, oil soluble wild rose extract, malt extract, malt root extract, *Ophiopogon* tuber extract, parsley extract, rye leaf juice concentrate, peppermint distillate, witch hazel distillate, witch hazel extract, rose extract, *parietaria* extract, *Isodonis japonicus* extract, *Eriobotrya japonica* leaf extract, oil soluble *Eriobotrya japonica* leaf extract, coltsfoot

extract, hoelen extract, *Ruscus aculeatus* root extract, powdered *Ruscus aculeatus* root extract, grape extract, grape leaf extract, grape water, Hayflower extract, *Luffa cylindrica* fruit extract, *Luffa cylindrica* fruit water, *Carthamus tinctorius* (safflower) extract, oil soluble *Tilia platyphyllos* extract, linden distillate, *Paeonia suffruticosa* (peony) extract, *Humulus lupulus* (hops) extract, oil soluble *Humulus lupulus* (hops) extract, pine extract, *Silybum marianum* (milk thistle) extract, *Aesculus hippocastanum* (horse chestnut) extract, oil soluble *Aesculus hippocastanum* (horse chestnut) extract, *Sapindus mukurossi* extract, *Melissa officinalis* (balm mint) extract, *Melilotus officinalis* (melilot) extract, *Prunus persica* (peach) leaf extract, oil soluble *Prunus persica* (peach) leaf extract, bean sprouts extract, *Centaurea cyanus* flower extract, *Centaurea cyanus* flower distillate, *Eucalyptus globulus* extract, Saxifrage extract, *Lilium* (lily) extract, *Coix* seed extract, oil soluble *Coix* seed extract, *Artemisia princeps pampanini* extract, *Artemisia princeps pampanini* water, *Lavandula angustifolia* (lavender) extract, *Lavandula angustifolia* (lavender) water, apple extract, *Ganoderma lucidum* extract, *Lactuca sativa* (lettuce) extract, lemon extract, *Astragalus sinicus* extract, *Rosa centifolia* (rose) flower water, *Rosemarinus officinalis* (rosemary) extract, oil soluble *Rosemarinus officinalis* (rosemary) extract, *Anthemis nobilis* extract and *Sanguisorba officinalis* extract;

amino acids and peptides such as glycine, alanine, valine, leucine, isoleucine, serine, threonine, phenylalanine, tyrosine, tryptophan, cystine, cysteine, methionine, proline, hydroxyproline, aspartic acid, asparagine, glutamic acid, glutamine, arginine, histidine, lysine,  $\gamma$ -aminobutyric acid, DL-pyrrolidonecarboxylic acid,  $\epsilon$ -aminocaproic acid, hydrolyzed elastin, water soluble elastin, hydrolyzed collagen, water

soluble collagen, casein, glutathione, wheat peptides and soybean peptide;

vitamins and factors acting like a vitamin such as: vitamin A and analogues thereof such as retinol, retinal, retinoic acid, 5 retinol acetate and retinol palmitate; carotenoids such as  $\alpha$ -carotene,  $\beta$ -carotene,  $\gamma$ -carotene,  $\delta$ -carotene, lycopene, zeaxanthin, cryptoxanthin, echinenon and astaxanthin; vitamin B<sub>1</sub> and analogues thereof such as thiamines; vitamin B<sub>2</sub> and analogues thereof such as riboflavin; vitamin B<sub>6</sub> and analogues thereof such as pyridoxine, pyridoxal and pyridoxamine; vitamin B<sub>12</sub> and analogues thereof such as cyanocobalamin; folic acids, nicotinic acid, nicotinamide, pantothenic acids, biotins; vitamin C and analogues thereof such as L-ascorbic acid, sodium L-ascorbate, L-ascorbyl stearate, L-ascorbyl palmitate, L-ascorbyl 15 dipalmitate, L-ascorbyl tetraisopalmitate, L-ascorbate sulfate disodium ester, magnesium L-ascorbyl, sodium L-ascorbyl phosphate and L-ascorbate-2-glucoside; vitamin D and analogues thereof such as ergocalciferol and cholecalciferol; vitamin E and analogues thereof such as d- $\alpha$ -tocopherol, DL- $\alpha$ -tocopherol, 20 dl- $\alpha$ -tocopherol acetate, dl- $\alpha$ -tocopherol succinate,  $\beta$ -tocopherol,  $\gamma$ -tocopherol and d- $\delta$ -tocopherol; ubiquinones, vitamin K and analogues thereof, carnitine, ferulic acid,  $\gamma$ -oryzanol,  $\alpha$ -lipoic acid and orotic acid;

antiseptic agents such as benzoic acid, sodium benzoate, 25 undecylenic acid, salicylic acid, sorbic acid, potassium sorbate, dehydroacetic acid, sodium dehydroacetate, isobutyl paraoxybenzoate, isopropyl paraoxybenzoate, ethyl paraoxybenzoate, butyl paraoxybenzoate, propyl paraoxybenzoate, benzyl paraoxybenzoate, methyl paraoxybenzoate, sodium 30 paraoxybenzoate methyl, phenoxyethanol, light sensitive dye No. 101, light sensitive dye No. 201 and light sensitive dye No. 401; antioxidantizing agents such as butylhydroxyanisole,

butylhydroxytoluene, propyl gallate, erythorbic acid, sodium erythorbate, para-hydroxyanisole and octyl gallate;

5 chelating agents to bind to a metal ion such as trisodium ethylenediamine hydroxyethyl triacetate, edetic acid, disodium edetate, trisodium edetate, tetrasodium edetate, sodium citrate, gluconic acid, phytic acid, sodium polyphosphate and sodium metaphosphate;

10 moisturizing agents such as hyaluronic acid, sodium hyaluronate, sodium chondroitin sulfate, sodium lactate, sodium pyrrolidone carboxylate, betaine, lactic acid bacteria fermented solution, yeast extract and ceramide;

15 anti-inflammatory agents such as glycyrrhizic acid, trisodium glycyrrhizinate, dipotassium glycyrrhizinate, monoammonium glycyrrhizinate,  $\beta$ -glycyrrhetic acid, glycerin glycyrrhetinate, stearyl glycyrrhetinate, lysozyme chloride, hydrocortisone and allantoin;

pH adjusting agents such as sodium hydroxide, potassium hydroxide and triethanolamine;

20 salts such as sodium chloride, potassium chloride, magnesium chloride and sodium sulfate;

$\alpha$ -hydroxy acids such as citric acid, glycolic acid, tartaric acid and lactic acid;

whitening agents such as arbutin,  $\alpha$ -arbutin and placenta extract;

25 essential oils such as *Archangelica officinalis* (angelica) oil, *Canangium odoratum* (ylang ylang) oil, *Canarium luzonicum* (elemi) oil, orange oil, *Chamomilla recutita* (matricaria) oil, *Anthemis nobilis* oil, *Elettaria cardamom* (cardamon) oil, *Acorus calamus* (calamus) oil, *Ferula galbaniflua* (galbanum) oil, 30 *Cinnamomum camphora* (camphor) oil, *Daucus carota* (carrot) seed oil, *Salvia sclarea* (clary sage) oil, *Citrus paradisi* (grapefruit) oil, *Eugenia caryophyllus* (clove) oil, Cinnamon bark oil,

Coriandrum sativum (coriander) oil, Cupressus sempervirens (cypress) oil, Santalum album (sandalwood) oil, Juniperus virginiana (cedarwood) oil, Cympogon nardus (citronella) oil, Cinnamomum zeylanicum (Cinnamon) leaf oil, Jasmine officinale (jasmine) absolute oil, Juniperus communis (juniper Berry) oil, Zingiber officinale (ginger) extract, Mentha spicata (spearmint) oil, Salvia officinalis (sage) oil, cedar oil, Pelargonium graveolens (geranium) oil, Thymus vulgaris (thyme) oil, Melaleuca alternifolia (tea tree) oil, Myristica fragrans (nutmeg) oil, 10 Melaleuca quinquefolia (niaouli) oil, Citrus aurantium (neroli) oil, pine oil, Ocimum basilicum (basil) oil, Mentha arvensis oil, Pogostemon patchouli (patchouli) oil, Cymbopogon martini (palmarosa) oil, Foeniculum vulgare (fennel) oil, Citrus bigaradia (petitgrain) oil, Piper nigrum (black pepper) oil, 15 Boswellia carterii (frankincense) oil, Vetiveria zizanoides (vetivert) oil, Mentha piperita (peppermint) oil, Citrus bergamia (bergamot) oil, benzoin oil, Aniba rosaeodora (bois de rose) oil, Origanum majorana (marjoram) oil, mandarin oil, Conumiphora myrrha (myrrh) oil, Melissa officinalis (balm mint) oil, 20 Eucalyptus globulus oil, Citrus junos oil, Citrus aurantifolia (lime) oil, Ravensare aromaticum (ravensare) oil, Lavandula latifolia (lavandin) oil, Lavandula angustifolia (lavender) oil, Tilia vulgaris (linden) oil, lemon oil, lemon grass oil, rose oil, Aniba rosaeodora (rosewood) oil, Rosmarinus officinalis (rosemary) oil and Levisticum officinale (lovage) oil; 25 terpenes such as limonene, pinene, terpinene, terpinolene, myrcene and longifeelene; fragrance, water, and the like.

Furthermore, to the cosmetic of the invention may also be 30 added any existing raw material of cosmetics at a general concentration. All raw materials of cosmetics described in, for example, Keshouhin genryou kizyun dai-2han chukai (Glossary for

Standards of Cosmetic Ingredients, 2<sup>nd</sup> edition) edited by Society of Japanese Pharmacopoeia, 1984 (YAKUJI NIPPO LIMITED.); Keshouhin genryou kizyun-gai seibun kikaku (The Japanese Cosmetic Ingredients Codex), under the editorship of 5 Pharmaceutical Affairs Bureau Evaluation and Registration Division, 1993 (YAKUJI NIPPO LIMITED.), Keshouhin genryou kizyun-gai seibun kikaku tsuiho (Supplement to The Japanese Cosmetic Ingredients Codex), under the editorship of Pharmaceutical Affairs Bureau Evaluation and Registration 10 Division, 1993 (YAKUJI NIPPO LIMITED.), Keshouhin syubetsu kyoka kizyun (The Comprehensive Licensing Standards of Cosmetics by Category), under the editorship of Pharmaceutical Affairs Bureau Evaluation and Registration Division, 1993 (YAKUJI NIPPO LIMITED.), Keshouhin syubetsu haigou seibun kikaku (The Japanese Cosmetic Ingredients Codex by Category), under the editorship 15 of Pharmaceutical Affairs Bureau Evaluation and Registration Division, 1997 (YAKUJI NIPPO LIMITED.), Keshouhin genryou jiten (Dictionary of raw materials of cosmetics), 1991 (Nikko Chemicals Co., Ltd.) and the like may be used.

20 The amount of these materials contained in the cosmetic is preferably 0.01 to 80 mass%, more preferably 0.1 to 25 mass%, and still more preferably 0.3 to 10 mass% in total amount of the cosmetic.

25 The cosmetic of the invention obtained in the method as above causes no irritation on skin, and is extremely excellent as: basic skin care cosmetics such as skin toner, lotion, milky lotion, essence, skin cream, cleansing gel, cleansing cream and pack; makeup cosmetics such as makeup base, foundation, eye shadow, 30 lip color and lip gloss; massaging cosmetics such as massaging gel and massaging cream (cold cream); and cosmetics for hair such as hair cream, styling gel and hair wax.

## BEST MODE FOR CARRYING OUT THE INVENTION

The present invention is explained in more detail below by way of Examples, however the invention is by no means limited to these Examples. In Examples demonstrated below, glycerin for use had a concentration of 98 mass% or more. Sodium surfactin for use was Aminofect (registered trademark) manufactured by SHOWA DENKO K.K. "%" indicates percentage by mass.

Example 1 to 10 and Comparative Example 1 to 4: Cleansing cosmetic  
10                   Cleansing cosmetics each having a composition as shown in  
Table 1 were prepared according to the preparation method  
described below. Storage stability test was performed using  
these cosmetics.

For the storage stability test, each sample was placed in  
15 a glass bottle. After leaving it to stand at 50°C for one week,  
the condition and appearance were observed. Samples in which  
some changes such as separation were observed were evaluated "x"  
while samples in which no change was found were evaluated as "O".  
In addition, each cosmetic of Examples was subjected to a test  
20 for evaluation with respect to washability.

In testing washability, each sample was applied to the skin, and thereafter, sensation of residual oil after washing the applied sample with tap water was evaluated. Samples which gave little sensation of residual oil were evaluated as "O", samples which gave a little sensation of residual oil were evaluated as " $\Delta$ ", and samples which gave a substantial sensation of residual oil were evaluated "x".

Table 1: Composition of cosmetic

Ingredient (% by mass.)	Example										Comparative Example
	1	2	3	4	5	6	7	8	9	10	
Sodium surfactin	1	0.7	0.7	0.9	0.9	0.9	0.2	2	0.9	0.9	0.05
Glycerin	24.5	19.1	19.1	37.4	37.4	24.5	24.5	37.4	37.4	37.4	24.5
Polyoxyethylene (20) glyceryl triisostearate	4.7	9.7	15.4	—	—	4.7	4.7	0.2	—	—	4.7
Polyoxyethylene (30) sorbit tetraoleate	—	—	—	13.2	17.7	1.7	—	—	0.2	—	—
Squalane	—	—	—	33	29.5	41.9	—	—	42.4	42.4	42.5
Tri 2-ethylhexanoate glycerin	65.4	—	—	9.9	8.9	12.5	66.3	64.4	12.7	12.7	66.4
Tricaprylate/tricaprate glycerin	—	67.5	61.8	—	—	—	—	—	—	—	—
Water	4.4	3	3	5.6	5.6	4.4	4.4	5.6	5.6	5.6	4.4
Results											
Storage stability	○	○	○	○	○	○	○	○	○	○	×
Washability	○	○	○	○	○	○	△	△	○	○	○

Preparation method of cosmetic:

Sodium surfactin was dissolved in glycerin, and thereto were added remaining ingredients except for water little by little while stirring to give a homogenous state. Water was further added thereto, and the mixture was stirred to give a homogenous state.

Results:

As is clear from Table 1, the cleansing cosmetics of the invention (Examples 1 to 10) exhibited more excellent storage stability or washability, in comparison with the cleansing cosmetics of Comparative Examples 1 to 4.

Examples 11 to 13: Cream

According to the method of preparation described below with a composition described in Table 2, creams were prepared.

Table 2: Composition of cream

	Example 11	Example 12	Example 13
Ingredient A (% by mass)			
Squalane	8	8	8
Olive oil	3	3	-
Jojoba oil	1	-	3
Methyl polysiloxane	-	1	1
Cetostearyl alcohol	1	1	-
DL- $\alpha$ -tocopherol	0.1	0.1	0.1
Polyoxyethylene (10) glyceryl isostearate	0.4	-	0.4
Polyoxyethylene (40) sorbit tetraoleate	-	0.4	-
Ingredient B (% by mass)			
Glycerin	6	6	6
1,3-Butanediol	1	1	1
Sodium surfactin	1	1	1
Phenoxy ethanol	0.3	0.3	0.3
Methylparaben	0.2	0.2	0.2
Carboxyvinyl polymer	0.4	0.4	0.4
Potassium hydroxide	0.2	0.2	0.2
Xanthan gum	0.2	0.2	0.2
Fragrance	0.02	0.02	0.02
Purified water	balance	balance	balance

Method of preparation:

After dissolving ingredients A and ingredients B at 80°C, respectively, they were mixed, and cooled to 30°C while stirring. The mixture was then left to stand to room temperature.

The aforementioned storage stability test was performed using the compositions of Examples 11 to 13. Consequently, excellent stability following storage was exhibited. Thus resulting cream was excellent in moisturizing ability, providing

no irritation, with a smooth feeling of use.

#### INDUSTRIAL APPLICABILITY

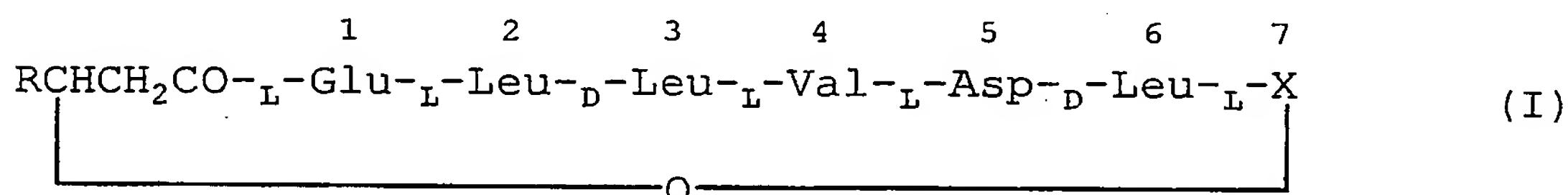
The cosmetic of the invention, with an extremely low skin irritating property, ensures high skin comfort and storage stability. In particular, when used as a cleansing cosmetic, it also exhibits an excellent washability.

## CLAIMS

1. A cosmetic composition, comprising 0.1 to 5 mass% of a lipopeptide compound, and 0.1 to 20 mass% of a polyoxyethylene glyceryl ether fatty acid ester and/or a polyoxyethylene sorbit fatty acid ester.

2. The cosmetic composition as claimed in claim 1, wherein the lipopeptide compound is derived from a microorganism.

3. The cosmetic composition as claimed in claim 2, wherein the lipopeptide compound is a surfactin represented by the following formula (I), an analogous compound or a salt thereof:



wherein X represents an amino acid residue selected from the group consisting of leucine, isoleucine, valine, glycine, serine, alanine, threonine, asparagine, glutamine, aspartic acid, glutamic acid, lysine, arginine, cysteine, methionine, phenylalanine, tyrosine, tryptophan, histidine, proline, 4-hydroxyproline and homoserine, and R is a normalalkyl group having 8 to 14 carbon atoms, an isoalkyl group having 8 to 14 carbon atoms or an anteiso-alkyl group having 8 to 14 carbon atoms.

4. The cosmetic composition as claimed in claim 3, wherein the lipopeptide compound is sodium surfactin.

5. The cosmetic composition as claimed in claim 3, wherein

the lipopeptide compound is a compound where the second, fourth and sixth amino acids in the formula (I) are each independently substituted by amino acid selected from a group consisting of leucine, isoleucine, valine, glycine, serine, alanine, threonine, asparagine, glutamine, aspartic acid, glutamic acid, lysine, arginine, cysteine, methionine, phenylalanine, tyrosine, tryptophan, histidine, proline, 4-hydroxyproline and homoserine.

6 A cleansing cosmetic using the cosmetic composition as claimed in any one of claims 1 to 5.

7. The cleansing cosmetic as claimed in claim 6, wherein the cosmetic is in gel form or cream form.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2004/012669

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K7/48

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data, CHEM ABS Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/62482 A (ITO SHINOBU ; TSUZUKI TOSHI (JP); FURUYA KAZUO (JP); MASATSUJI EIKO (J) 9 December 1999 (1999-12-09) cited in the application page 21, line 1 - line 5; claims 1,4,7,11; example 26 ----- A PATENT ABSTRACTS OF JAPAN vol. 2003, no. 09, 3 September 2003 (2003-09-03) & JP 2003 146827 A (KANEBO LTD), 21 May 2003 (2003-05-21) abstract ----- -/-	1-7

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

\* Special categories of cited documents :

- 'A' document defining the general state of the art which is not considered to be of particular relevance
- 'E' earlier document but published on or after the International filing date
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- 'P' document published prior to the international filing date but later than the priority date claimed

- 'T' later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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Date of the actual completion of the international search

Date of mailing of the international search report

20 December 2004

30/12/2004

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## INTERNATIONAL SEARCH REPORT

International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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P, A	PATENT ABSTRACTS OF JAPAN vol. 2003, no. 12, 5 December 2003 (2003-12-05) & JP 2003 277220 A (KANEBO LTD), 2 October 2003 (2003-10-02) abstract -----	1-7

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Information on patent family members

International Application No

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			WO	03013446 A1	20-02-2003
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